ASSESSING UTILITIES FOR MUSCLE-INVASIVE BLADDER CANCER-RELATED HEALTH STATES

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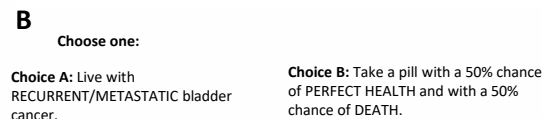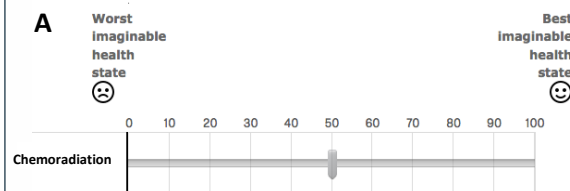
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PURPOSE/OBJECTIVE(S)

- Multiple treatment modalities exist for muscle-invasive bladder cancer (MIBC), including radical cystectomy and trimodality therapy, which consists of transurethral resection followed by chemoradiation[1]
- How patients value functional outcomes against oncologic outcomes during decision-making remains unclear
- Measurement of health state utilities is crucial for completion of cost-effectiveness analyses and for valuation of individuals' preferences regarding the risks/benefits of treatments[2]
- We sought to quantify individuals' preferences on a scale of 0 to 1, where 1 represents perfect health and 0 represents death

MATERIAL & METHODS

- Descriptions of six hypothetical health states were developed based on literature review and national guidelines
- These included:
  - Neoadjuvant chemotherapy followed by radical cystectomy with ileal conduit (IC)
  - Neoadjuvant chemotherapy followed by radical cystectomy with neobladder reconstruction (NB)
  - Transurethral resection and chemotherapy/radiation (CRT)
  - CRT requiring salvage cystectomy for recurrence (SC)
  - Recurrent/metastatic bladder cancer after local therapy (RMBC)
  - Metastatic bladder cancer (MBC)
- Descriptions consisted of diagnosis, treatments, adverse effects, follow-up protocol, and prognosis and were reviewed for accuracy by expert panel
- Individuals ≥18 years old with no personal/family history of bladder cancer were asked to evaluate states using the visual analog scale (VAS) and standard gamble (SG) methods (Figure 1)
- Incomplete responses, responses in which RMBC/MBC were rated with higher scores than other states on both methods, or with identical responses were excluded

RESULTS

Figure 1. Examples of the Visual Analog Scale (A) and Standard Gamble (B)

A Worst imaginable health state ☹ 0 10 20 30 40 50 60 70 80 90 100 Best imaginable health state ☺

Chemoradiation

B Choose one:

Choice A: Live with RECURRENT/METASTATIC bladder cancer.

Choice B: Take a pill with a 50% chance of PERFECT HEALTH and with a 50% chance of DEATH.

N/A: My preference for these two choices is equal.

- 57 individuals completed the exercises, of which 54 (94.7%) were included for analysis (Table 1)
- Values for each health state are presented in Table 2
- No differences in scores were observed between IC, NB, and CRT
- SC was rated as significantly worse than NB and CRT using VAS (P<0.001) but not SG
- Both RMBC and MBC rated as significantly worse than the other states using both methods (P<0.001)

Table 2. Preference values for each health state, mean (SD)

	IC	NB	CRT	SC	RMBC	MBC
VAS	0.514 (0.192)	0.582 (0.199)	0.565 (0.213)	0.429 (0.200)	0.178 (0.156)	0.169 (0.125)
SG	0.694 (0.208)	0.730 (0.211)	0.733 (0.203)	0.631 (0.206)	0.311 (0.203)	0.327 (0.189)

Table 1. Respondent characteristics

Factor	Respondents (N=54)
Age, y	
Mean (SD)	44.0 (16.7)
Range	20-75
Female, % (no.)	42.6% (23)
Married, % (no.)	61.1% (33)
Education, % (no.)	
High School	7.4% (4)
College	37.0% (20)
Postgrad	55.6% (30)
Salary, % (no.)	
<$100k	29.6% (16)
$100k-$200k	31.5% (17)
$200k-$300k	9.3% (5)
$300k+	29.6% (16)
Dependents, % (no.)	
0	68.5% (37)
1	22.2% (12)
2+	9.3% (5)

SUMMARY/CONCLUSION

- To our knowledge, this is the first study to measure preferences related to the treatment of MIBC
- Within this sample of the general population, preferences for local treatments including IC, NB, and CRT were not found to be significantly different
- These values can be used to calculate quality-adjusted life expectancy in future cost-effectiveness analyses

REFERENCES

1. Ploussard G, Daneshmand S, Efstathiou JA, et al. Critical Analysis of Bladder Sparing with Trimodal Therapy in Muscle-invasive Bladder Cancer: A Systematic Review. *European Urology*. 2014;66(1):120-137.
2. Chang EM, Saigal CS, Raldow AC. Explaining Health State Utility Assessment. *JAMA*. 2020 Feb 24. Online ahead of print.

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